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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,187	10/12/2004	Luciano Lenzini	23082	1849

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EXAMINER	
YUEN, KAN	
ART UNIT	**PAPER NUMBER**
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/511,187	LENZINI ET AL.	
	Examiner	Art Unit	
	Kan Yuen	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 October 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *27-60* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *27,41,43 and 44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 October 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/12/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Detailed Action

Note

1. Any limitation appears inside an parenthesis will not be considered as part of the claimed limitation.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

3. The drawings are objected to because there is no figure number in the drawing. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the

applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

In addition to Replacement Sheets containing the corrected drawing figure(s), applicant is required to submit a marked-up copy of each Replacement Sheet including annotations indicating the changes made to the previous version. The marked-up copy must be clearly labeled as "Annotated Sheets" and must be presented in the amendment or remarks section that explains the change(s) to the drawings. See 37 CFR 1.121(d)(1). Failure to timely submit the proposed drawing and marked-up copy will result in the abandonment of the application.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-60 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 27 is considered as vague and indefinite, because the variables (I, j) in lines 4-5 set to (Ns, and Na) are infinite numbers. Similar problems exist in claim 32, claim 44, and claim 49.

Claims 28-43 are rejected, because they are depending on claim 27.

Claims 45-60 are rejected, because they are depending on claim 44.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 27, 41, and 43, 44 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1, 3, 4, and 9 of copending Application No. 10/399887. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following:

For claims 27, claim 1 of copending Application No. 10/399887 disclosed the method of:

1. (currently amended) A method of scheduling a service resource shared between multiple information packet flows, said flows generating respective associated queues and being served by the attribution of a token, this plurality of flows including synchronous flows ~~(h = 1, 2, ..., NS) , which require~~ requiring a guaranteed minimum service rate [[,]] and asynchronous flows ~~(i = 1, 2, ..., NA)~~ destined to exploit the service capacity of said resource left unused by the synchronous flows,

comprising the steps of:

providing a server that visits the ~~respective~~ queues associated with said flows in successive cycles [[,]] and ~~determining~~ and that determines a time value of expected rotation ~~(TTRT), which~~ that in turn identifies [[the]] an amount of time necessary for the server to complete a visit cycle to the [[said]] respective queues;

associating [[to]] with each synchronous flow [[(h)]] a respective synchronous capacity value [[(Hh)]] indicative of the maximum amount of time for which a synchronous flow can be served before relinquishing the token;

associating [[to]] with each synchronous flow (i) a first respective delay value ~~(lateness(i))~~ that identifies a value that must be made up for the respective queue to ~~have the right to~~ be served, and a second value ~~(last token time)~~ that indicates [[the]] an instant in which the server visited the respective queue in the

previous cycle, determining for said respective queue [[, the]] an amount of time that has passed since the previous visit of the server,

serving each queue associated to a respective synchronous flow [[(h)]] for a maximum service time equal to said respective value of synchronous capacity [[(Hh)]], and

serving each queue associated to [[an]] a respective asynchronous flow [[(i)]] only if the server's visit occurs before an expected instant, said advance being determined as the difference between said expected rotation time value ~~(TTRT)~~ and [[the]] an amount of time that has passed since the server's previous visit and [[the]] any accumulated delay; wherein if positive, this difference defines [[the]] a maximum service time for each said queue.

Applicant's claim 27 merely narrowed down the scope of the claim 1 of copending application no. 10/399887 by specifying:

(f) defining said respective synchronous capacity value (H_i) for the queue associated to the i-th synchronous flow by insuring that:

(f_1) a sum of the synchronous capacity values for said synchronous flows plus the duration of the longest packet services by said shared service resource (T_{max}) does not exceed said target rotation time value (TTRT); and

(f_2) said target rotation time value (TTRT)is not lower than a ratio of said longest packet serviced by said shared service resource (T_{max}) to a complement to one of the sum over said synchronous flows of the minimum service rates (r_i)required by said synchronous flows normalized to the service capacity (C) of said shared service resource.

An official notice is taken that setting comparator(s) to compare the values between the synchronous capacity and duration of the longest packet service with target rotation time value (TTRT), can be done by a person of ordinary skilled in the art at the time of the invention. Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the obviousness in the applicant's invention. The motivation for using the obviousness in the copending application being that the comparator(s) can provide accurate statistical results or values, and the system in the copending application can make accurate operation based on the statistical results or values.

For claim 41, claim 3 of copending application no.: 10/399887 disclosed the method of:

> 3. (currently amended) The method defined in claim 1 wherein, ~~in the case in which~~ when said difference is negative, each said queue associated to [[an]] a respective asynchronous flow (i) is not served and the value of said difference is accumulated with said delay.

Applicant's claim 41 is almost identical with claim 3 of copending application no. 10/399887, with the exception that the application has variables (j, and Lj), where in the copending application 10/399887 has a variable (i) only.

For claim 43, claim 4 of copending application no.: 10/399887 disclosed the method of:

4. (currently amended) The method defined in claim 1 wherein said first respective value ~~(fatcness(i))~~ and said second respective value ~~(last token time)~~ are initialized to zero.

Applicant's claim 43 merely narrowed down the scope of claim 4 of copending application by specifying initialized to zero and to a moment of startup of the current cycle when the flow is activated. However, its obvious to initialized to the beginning of the current cycle when the flow is activated. Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the obviousness in the applicant's invention. The motivation for using the obviousness in the copending application being that the first and second respective values can be re-set to a new value, so that a new service based on the value can be performed.

For claim 44, claim 9 of copending application no.: 10/399887 disclosed the method of:

9. (currently amended) A system for the scheduling of a service resource shared between multiple information packet flows, said flows generating respective associated queues and being served by the attribution of a token; this plurality of flows includes synchronous flows ~~(h = 1, 2, ..., N3), which require~~ requiring a guaranteed minimum service rate [[,]] and asynchronous flows ~~(i = 1, 2, ..., NA)~~ destined to exploit the service capacity of said resource left unused by the synchronous flows, said system comprising

a server that is able to visit the ~~respective~~ queues associated to said flows ~~(h, i)~~ in successive cycles; the system being configured to perform the following operations:

determine an expected rotation time value ~~(TTRT)~~ which identifies [[the]] an amount of time necessary for the server to complete a visiting cycle of said respective queues,

associate [[to]] with each synchronous flow (h) a respective synchronous capacity value (H_h)

indicative of the maximum amount of time for which a respective synchronous flow can be served before relinquishing the token,

associate [[to]] with each asynchronous flow [[(i)]] a first respective delay value ~~(lateness(i))~~ that identifies the delay that must be made up for the respective queue to ~~have the right to~~ be served, and a second respective value ~~(last token time)~~ that indicates [[the]] an instant in which the server visited the respective queue in the previous cycle, determining for said respective queue, [[the]] an amount of time that has passed since the previous visit of the server,

serve each queue associated to a respective synchronous flow [[(h)]] for a maximum service time equal to said respective value of synchronous capacity [[(Hh)]], and

serve each queue associated to [[an]] a respective asynchronous flow [[(i)]] only if the server's visit occurs before the expected instant, said advance being determined as the difference between said expected rotation time value ~~(TTRT)~~ and [[the]] an amount of time that has passed since the server's previous visit and [[the]] any accumulated delay; if positive,

this difference defines [[the]] a maximum service time for each said queue.

Applicant's claim 27 merely narrowed down the scope of the claim 1 of copending application no. 10/399887 by specifying:

the system being configured to define said respective synchronous capacity value (H_i) for the queue associated to the i-th synchronous flow by ensuring that:

the sum of the synchronous capacity values for said synchronous flows plus the duration of the longest packet serviced by said shared service resource (T) does not exceed said target rotation time value (TTRT); and

said target rotation time value (TTRT) is not lower than the ratio of said longest packet serviced by said shared service resource (Tmm) to the complementary to one of the sum over said synchronous flows of the minimum service rates (ri) required by said synchronous flows normalized to the service capacity (C of said shared service resource.

An official notice is taken that setting comparator(s) to compare the values between the synchronous capacity and duration of the longest packet service with target rotation time value (TTRT), can be done by a person of ordinary skilled in the art at the time of the invention. Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the obviousness in the applicant's invention. The motivation for using the obviousness in the copending application being that the comparator(s) can provide accurate statistical results or values, and the system in the copending application can make accurate operation based on the statistical results or values.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Allowable Subject Matter

7. Claims 28-40, 42, and 45-60 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Regarding to claims 28, and 45 the prior art failed to teach the method of the respective synchronous capacity value for the queue associated to the l-th synchronous flow as the product of minimum service rate.

Regarding to claim 29, the prior art failed to teach the method of defining a factor such that the sum over the synchronous flows of the minimum service rates required by the synchronous flows normalized to the service capacity of the shared service.

Regarding to claims 30 and 47, the prior art failed to teach the method of insuring that the sum over the synchronous flows of the minimum service rates required by the synchronous flows normalized to the service capacity of the shared service.

Regarding to claims 32 and 50 the prior art failed to teach the method of during each of the successive cycles, the server performs a double scan on all the queues associated to synchronous flows.

Regarding to claim 46, the prior art failed to teach the method of defining a factor such that the sum over the synchronous flows of the minimum service rates required by the synchronous flows normalized to the service capacity of the shared service resource is not larger than the complementary to one of the factor.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wong (Pat No.: 6570883), Ghahremani (Pat No.: 7116679), and Chuah (Pat No.: 6469991), are show systems which considered pertinent to the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kan Yuen whose telephone number is 571-270-2413. The examiner can normally be reached on Monday-Friday 10:00a.m-3:00p.m EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky O. Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ky

RICKY Q. NGO
SUPERVISORY PATENT EXAMINER